

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s) : Toshiaki INADA Confirmation No. 2723
Appl. No. : 10/553,072
Filed : October 12, 2005
Art Unit : 1794
Examiner : Dhirajlals NAKARANI
For : RESINOUS INTERIOR MATERIAL

AMENDMENT AND RESPONSE TO OFFICE ACTION UNDER 37 C.F.R. § 1.116

Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Sir:

In response to the final Office Action mailed March 23, 2009, Applicant requests reconsideration in view of the following amendments and remarks. Applicant respectfully submits that the amendments present the rejected claims in condition for allowance or in better condition for appeal. Therefore, Applicant requests entry of the amendments.

Amendments to the Claims, including a complete listing of the claims, begin on page 2.
Remarks begin on page 5.

DO NOT ENTER: /DSN/ 06/29/2009

CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A resinous interior material comprising 10 to 45 parts by mass of an ethylene/vinyl acetate copolymer, 10 to 90 parts by mass of a polyolefin resin, 10 to 90 parts by mass of either a block copolymer of styrene and one or more aliphatic unsaturated hydrocarbon compounds or a product of hydrogenation of the copolymer (hereinafter referred to as styrene/(poly)olefin block copolymer), and 100 to 700 parts by mass of an inorganic filler, wherein the ethylene/vinyl acetate copolymer has a vinyl acetate concentration of 50% or higher, the ethylene/vinyl acetate copolymer has a melt flow rate (hereinafter referred to as MFR) which is higher by at least 20 g/10 min than MFR's of other resins, and the styrene/(poly)olefin block copolymer has a glass transition temperature (T_g or $\tan\delta$ absorption) [[of]] for the polystyrene block and a glass transition temperature for the (poly)olefin block, wherein at least one of the glass transition temperatures is from -20°C to +50°C.

2. (Canceled)

3. (Canceled)

4. (Previously Presented) The resinous interior material as claimed in claim 1, wherein the aliphatic unsaturated hydrocarbon compounds in the styrene/(poly)olefin block copolymer comprise an aliphatic unsaturated hydrocarbon compound having 3 or more carbon atoms.

5. (Currently Amended) A flooring material produced by compounding 10 to 50 parts by mass of an ethylene/vinyl acetate copolymer having a vinyl acetate concentration of 50% or higher and an MFR of 40 to 100 g/10 min with 10 to 90 parts by mass of a polyolefin resin having an MFR of 1 to 20 g/10 min, 10 to 90 parts by mass of a

styrene/(poly)olefin block copolymer having a glass transition temperature [[of]] for the polystyrene block and a glass transition temperature for the (poly)olefin block, wherein at least one of the glass transition temperatures is from -10°C to +40°C and an MFR of 1 to 20 g/10 min, and 400 to 700 parts by mass of an inorganic filler and molding the resultant composition into a single-layer structure.

6. (Original) The flooring material as claimed in claim 5, wherein a copolymer of methyl methacrylate and an acrylic ester is further compounded in an amount of 10 to 50 parts by mass.

7. (Previously Presented) The flooring material as claimed in claim 5, wherein an ethylene/acrylic ester/maleic anhydride terpolymer is further compounded in an amount of 10 to 30 parts by mass.

8. (Previously Presented) The flooring material as claimed in claim 5, wherein a tackifier is further compounded in an amount of 1 to 30 parts by mass.

9. (Previously Presented) The flooring material as claimed in claim 5, which is a flooring tile.

10. (Currently Amended) A skirting board produced through compounding 10 to 45 parts by mass of an ethylene/vinyl acetate copolymer having a vinyl acetate concentration of 50% or higher and an MFR of 40 to 100 g/10 min with 10 to 90 parts by mass of a polyolefin resin having an MFR of 1 to 20 g/10 min, 10 to 90 parts by mass of a styrene/(poly)olefin block copolymer having a glass transition temperature [[of]] for the polystyrene block and a glass transition temperature for the (poly)olefin block, wherein at least one of the glass transition temperatures is from -10°C to +40°C and an MFR of 1-20 g/10 min, and 150 to 400 parts by mass of an inorganic filler.

11. (Original) The skirting board as claimed in claim 10, wherein an ethylene/maleic anhydride copolymer or an ethylene/methacrylic acid copolymer is further compounded in an amount of 1 to 30 parts by mass.

12. (Previously Presented) The skirting board as claimed in claim 10, wherein a tackifier is further compounded in an amount of 1 to 30 parts by mass.

13. (Previously Presented) The skirting board as claimed in claim 10, which has a surface layer formed by superposing an ionomer resin.

14. (Previously Presented) The skirting board as claimed in claim 10, which has a surface layer formed by superposing a nylon resin.

REMARKS

I. Status of the claims

Claims 1 and 4-14 are pending. Claims 2 and 3 remain canceled. Claims 1, 5 and 10 have been amended to clarify that at least one of the glass transition temperatures of the styrene/(poly)olefin block copolymer is within the claimed range. Support for these amendments may be found, for example, on page 8, line 14 to page 9, line 3; page 13, lines 16-25; and page 22, lines 17-25 of the specification.

No new matter has been added through these amendments. Because the amendments are being made solely to clarify the claimed invention, entry of the amendments should not necessitate a new search by the examiner. Accordingly, Applicant respectfully requests that the amendments be entered.

II. Rejection under 35 U.S.C. § 112, second paragraph

The examiner has rejected claims 1 and 4-14 as being indefinite for failing to particular point out and distinctly claim the subject matter which applicant regards as the invention. The examiner states that in claims 1, 5 and 10, the phrase “the/a styrene/(poly)olefin block copolymer has a glass transition temperature of...” renders the claims indefinite because the styrene/(poly)olefin block copolymer generally has two different glass transition temperatures. According to the examiner, the claimed language is not clear in terms of which glass transition temperature of which block of the styrene/(poly)olefin block copolymer is referred to. Applicant respectfully traverses this rejection.

From the outset, the examiner’s argument that styrene/(poly)olefin block copolymer has two different glass transition temperatures is irrelevant to the definiteness issue of the claim language. As already discussed substantively in Applicant’s Response of January 15, 2009, the claimed “glass transition temperature” should not be interpreted as being limited to either the glass transition temperature due to the styrene portion or the glass transition temperature due to the olefin portion. Claims 1, 5 and 10 recite the term “a glass transition temperature” to indicate that at least one of the glass transition temperatures of the styrene/(poly)olefin block copolymer is within the claimed range, regardless which block of the styrene/(poly)olefin block copolymer is referred to. See Applicant’ Response filed on January 15, 2009 pages 5-6.

Nevertheless, to expedite prosecution and avoid any ambiguity relating to this term, Applicant has amended claims 1, 5 and 10 to clarify that at least one of the glass transition temperatures of the styrene/(poly)olefin block copolymer is within the claimed range. Hence, the language of amended claims 1, 5, and 10 is not indefinite. One of ordinary skill would understand the metes and bounds of Applicant's invention from the current claim language. Accordingly, Applicant respectfully requests that the examiner withdraw this rejection under 35 U.S.C. § 112, second paragraph.

III. Rejection under 35 U.S.C. § 103(a) over Inada in view of Vosters

The examiner has rejected claims 1 and 4-14 as being unpatentable over U.S. Patent No. 6,380,296 B1 to Inada ("Inada") in view of U.S. Patent No. 5,863,978 to Vosters ("Vosters"). According to the examiner, Inada discloses a resinous interior material, flooring material and skirting material comprising all recited components except a styrene/(poly)olefin block copolymer. The examiner tries to cure Inada's deficiency by combining Inada with Vosters, which allegedly teaches adding the styrene/(poly)olefin block copolymer to the wall and floor covering compositions to achieve good processability, relatively low density, good surface appearance and good scratch resistance. The examiner concludes that it would have been obvious to add the styrene/(poly)olefin block copolymer of Vosters in the compositions of Inada to lower density. Applicant respectfully traverses this rejection.

While Inada discloses resin type interior material comprising ethylene vinyl acetate copolymer and inorganic filler, Inada is completely silent relating to the use of a styrene/(poly)olefin block copolymer. Vosters discloses a composition useful in wall and floor covering comprising a styrene/(poly)olefin block copolymer. However, Vosters does not teach or suggest anything relating to the glass transition temperature range of the styrene/(poly)olefin block copolymer. Nor could Vosters possibly teach or suggest any benefit conferred by such claimed glass transition temperature range of the styrene/(poly)olefin block copolymer.

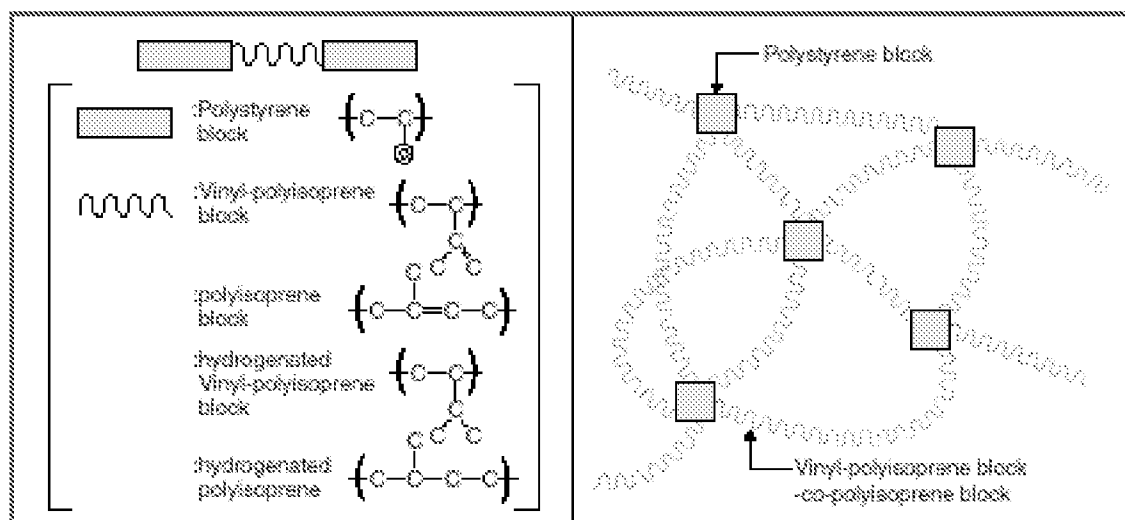
The examiner states that Vosters discloses styrene/(poly)olefin copolymer such as SBS, SIS, BSB, (SB)_n, (SI)_n etc., wherein S represents polystyrene block and I represents polyisoprene block. According to the examiner, because Voster's polystyrene/polyisoprene block is similar to

the claimed polystyrene/polyisoprene block polymer in Example 1, Vosters' copolymer inherently has a glass transition temperature within the claimed range.

Applicant respectfully submits the examiner's assertion that the claimed glass transition temperature range is inherent to Voster's polystyrene/polyisoprene block copolymer has not met the threshold necessary to show inherency. MPEP § 2112 requires that the examiner must provide rationale or evidence tending to show inherency. See *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) ("In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art."). See also *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) ("The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic.").

In this case, the examiner has not met the burden of providing a technical reasoning to support the determination that the few polystyrene/(poly)olefin copolymer of Voster would have a glass transition temperature that is necessarily within the claimed range. The mere assertion that Voster disclosing *similar* polymer composition as the claimed polymer composition does not necessarily lead to the conclusion that Vosters' polymer composition possess the same glass transition temperature range as Applicant's claimed styrene/(poly)olefin block copolymer.

The glass transition temperature, a temperature at which a polymer becomes soft and flexible, depends not only on the molecular weight of the polymer, but also on many other factors, such as the structure of the polymer. For instance, Hybrar™ 5127, manufactured by Kuraray Co. is an example of a styrene/(poly)olefin block copolymer having at least one glass transition temperature within the range of -20°C to +50°C. See the specification, page 8, lines 10-12, page 28, lines 8-10, and Example 1. The Hybrar™ 5127 has a reticular (netlike) structure, as shown below in the figures cited from the online catalog of Hybrar™.



In contrast, the structure of Vosters polystyrene/(poly)olefin block copolymer is exclusively linear or star shape. The styrene/(poly)olefin copolymer cited by the examiner such as SBS, SIS, BSB are linear-shape polymers; and $(SB)_n$, $(SI)_n$ are star-shape polymers. See Vosters, col. 1, lines 61-64; col. 3, lines 23-29; and col. 3, lines 30-34. Because the structure of the styrene/(poly)olefin copolymer of the claimed invention is distinctively different from those disclosed in Vosters, and because the glass transition temperature of a polymer depends at least partially on the structure of the polymer, Vosters' polystyrene/polyisoprene block copolymer would not necessarily have the same glass transition temperature range as Applicant's claimed styrene/(poly)olefin block copolymer. Hence, the examiner's conclusion that Vosters' copolymer would inherently have a glass transition temperature within the claimed range is not supported by a technical reasoning of the properties associated with the polymers.

In addition, the claimed styrene/(poly)olefin copolymer having a glass transition temperature within the claimed range provides improved properties to the interior material. These improved properties are unexpected view of the prior art references. For example, when the copolymer has a glass transition temperature *higher* than the claimed lower threshold, the interior material obtains improved stress-relaxing properties and durability and, in particular, satisfactory conformability in application resulting excellent marring resistance and abrasion resistance; when the copolymer has a glass transition temperature *lower* than the claimed higher threshold, the interior material does not become vitreous and hard or brittle at the actual use temperature for the interior material. Only when the claimed styrene/(poly)olefin block copolymer has a glass transition temperature within the claimed range can it regulate the

hardness or other properties of the interior material. See the specification, on page 8, line 18 to page 9, line 12; and page 5, line 24 to page 6, line 11. Such improved properties are not taught or suggested in either Inada or Vosters.

Accordingly, Inada and Vosters, either alone or in combination, fail to teach or suggest a styrene/(poly)olefin block copolymer having at least one glass transition temperature within claimed invention. Applicant therefore respectfully requests the rejection of claims 1, and 4-14 under 35 U.S.C. § 103(a) be withdrawn.

IV. Conclusion

Applicants respectfully request reconsideration of this application in view of the above amendments and remarks.

Except for issue fees payable under 37 C.F.R. §1.18, the Commissioner is hereby authorized to charge any payment deficiency to Deposit Account No. 19-2380. Should the examiner have any questions that would facilitate further prosecution or allowance of this application, the examiner is invited to contact the Applicants' representative designated below.

Respectfully submitted,

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